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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/867,664	05/31/2001	Naoshi Matsuo	1359.1048	7964

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EXAMINER

NG, CHRISTINE Y

ART UNIT PAPER NUMBER

2663

DATE MAILED: 07/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

SM

Office Action Summary	Application No. 09/867,664	Applicant(s) MATSUO, NAOSHI	
	Examiner Christine Ng	Art Unit 2663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 April 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 5, 10, 13 and 18-20 is/are rejected.
- 7) ☒ Claim(s) 3, 4, 6-9, 11, 12 and 14-17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>5/25/05</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claims 3, 5, 7-11, 13 and 15-18 are objected to because of the following informalities:

All claims are dependent on cancelled claim 2.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 5, 10, 13 and 18-20 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,678,254 to Song.

Referring to claims 1 and 19, Song discloses in Figures 3 and 4 an echo canceling processing program (Figures 3 and 4) performing echo canceling processing for a full-duplex communication system. Refer to Column 1, lines 15-16; Column 3, lines 50-56; and Column 4, line 30 to Column 4, line 5. The program (Figures 3 and 4) comprises program codes of:

A sound characteristics detecting processing operation (coefficient update

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module 350) detecting sound characteristics information of an echo path seen from a speaker side (Figure 1, near-end terminal 110). Coefficient update module 350 estimates the echo path by calculating coefficients based on the received audio 400. Refer to Column 5, lines 22-26.

An echo canceling processing operation (NLP module 370) canceling an echo included in a signal returned from a system on a conversation partner side (Figure 1, far-end terminal 120) based on the sound characteristics information detected in the sound characteristics detecting processing operation (coefficient update module 350). NLP module 370 subtracts the residual echo from the outgoing voice signal using the coefficients from coefficient update module 350. Refer to Column 5, lines 51-63.

The sound characteristics detecting portion and the echo canceling portion being installed in a communication system not on the conversation partner side (Figure 1, far-end terminal 120) but on the speaker side (Figure 1, near-end terminal 110). Refer to Column 3, line 61 to Column 4, line 8.

[Previously claim 2] An adjusting portion (adaptive filter module 360) receiving a tuning signal (EST_ECHO) of an echo canceling processing by a speaker (Figure 1, near-end terminal 110), wherein the echo canceling processing portion (NLP module 370) cancels the echo using the tuning signal (EST_ECHO) in addition to the sound characteristics information detected by the sound characteristics detecting portion (coefficient update module 350). Adaptive filter module 360 produces an estimated echo EST_ECHO; EST_ECHO is used to cancel the echo from the outgoing voice signal. Refer to Column 5, lines 51-59.

Referring to claims 5 and 13, Song discloses that a voice signal inputted during a conversation is regarded as a reference signal, and the sound characteristics detecting portion (coefficient update module 350) detects the sound characteristics information of the echo path seen from the speaker side (Figure 1, near-end terminal 110) using the voice signal and a response signal (RES_ECHO) returned from the conversation partner side (Figure 1, far-end terminal 120). Coefficient update module 350 computes coefficients based on the received audio 400 and prior residual echo values RES_ECHO; RES_ECHO is also based on samples of the received audio 400 from far-end terminal 120. Refer to Column 5, lines 22-26 and lines 51-59.

Referring to claims 10 and 18, Song discloses that the speaker (Figure 1, near-end terminal 110) can choose execution or suspension of the echo canceling processing by the echo canceling processing portion (NLP module 370) and of the sound characteristics detecting processing of the echo path by the sound characteristics detecting portion (coefficient update module 350). "Upon detection of a double talk condition, DTD module 380 disables NLP module 370 and coefficient update module 350 to avoid any coefficient updates for that cycle and many cycles that follow for hangover" (Column 6, lines 4-7). Refer to Column 6, lines 30-37.

Referring to claim 20, refer to the rejection of claims 1 and 19. Furthermore, Song discloses that the echo canceller "includes software executable by a processor (e.g., a digital signal processor, a general microprocessor, a controller, a state machine and the like)". Refer to Column 3, lines 50-58.

Allowable Subject Matter

4. Claims 3, 4, 6-9, 11, 12 and 14-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

5. Applicant's arguments filed April 19, 2005 have been fully considered but they are not persuasive.

Referring to the arguments of claims 1 and 2 that EST_ECHO is not a tuning signal (Page 8, lines 1-10), refer to Column 5, lines 51-63 and Column 6, lines 26-29. EST_ECHO can act as a tuning signal since it is subtracted from the echo, thereby 'tuning' the echo to further minimize the echo and the residual echo (RES_ECHO). EST_ECHO and RES_ECHO contribute to eliminating the echo from the outgoing voice signal, which is a form of 'tuning'.

Referring to the arguments of claims 10 and 18 (Page 8, lines 15-24), refer to Column 6, lines 1-7 and lines 30-37. Song does not specifically disclose that the speaker can choose execution or suspension of the echo canceling processing. However, a double talk condition disables the echo canceling processing for as long as the double talk condition persists. A speaker can therefore suspend the echo canceling processing by creating a double talk situation, during which "audio is simultaneously transmitted between the far-end terminal and the near-end terminal" (Column 6, lines 1-3). Furthermore, this offers motivation to one skilled in the art to include that the echo canceling processing can be executed or suspended based on external conditions.


Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christine Ng whose telephone number is (571) 272-3124. The examiner can normally be reached on M-F; 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571) 272-3139. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

C. Ng CW
July 7, 2005


RICKY NGO
PRIMARY EXAMINER
7/8/05